

BIODIESEL PROGRAM

John Van de Vaarst
Facilities Management and Operations Division

Henry A. Wallace
Beltsville Agricultural Research Center
Agricultural Research Service

BIODIESEL PROGRAM



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BACKGROUND

August 1, 1999 – demonstration
project – kick off

150 pieces of equipment

service vehicles

farm equipment

snow removal

OVERALL CONDITION

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USED TO DATE

August 1999 through December 2003

705,971 gallons

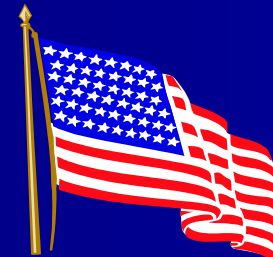
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REDUCTION ON
FOREIGN OIL

Supporting the American farmer



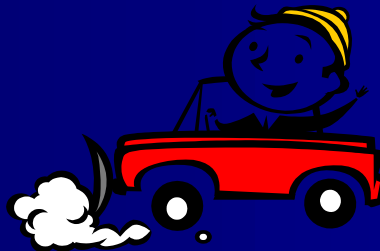
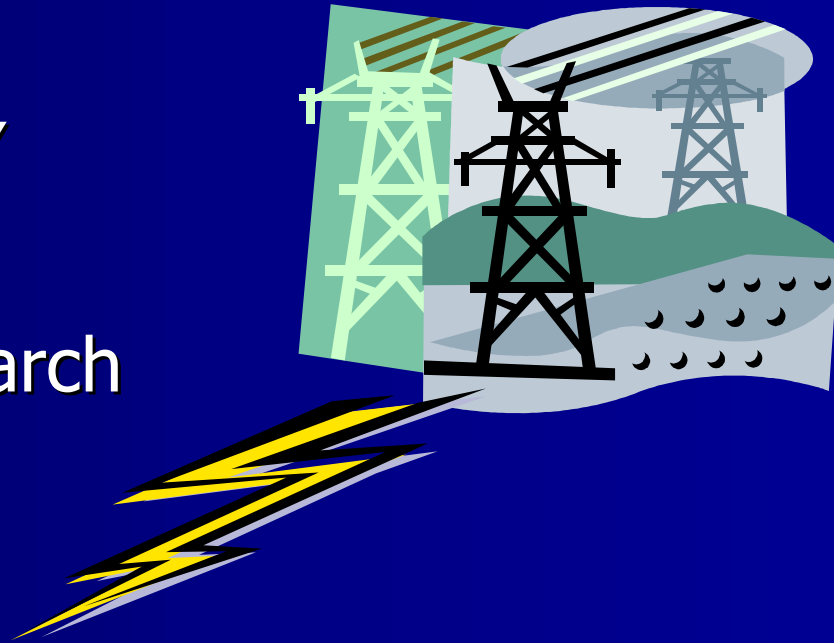
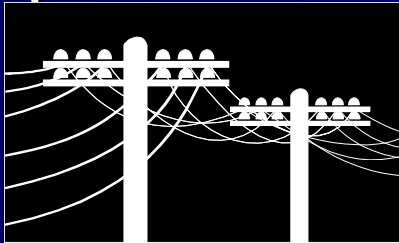
Helping the overall American
economy



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RELIABILITY AND
DEPENDABILITY

Impact on Research



High-Voltage Maintenance



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EQUIPMENT

Less “down time” for mechanical problems

Cold weather issues

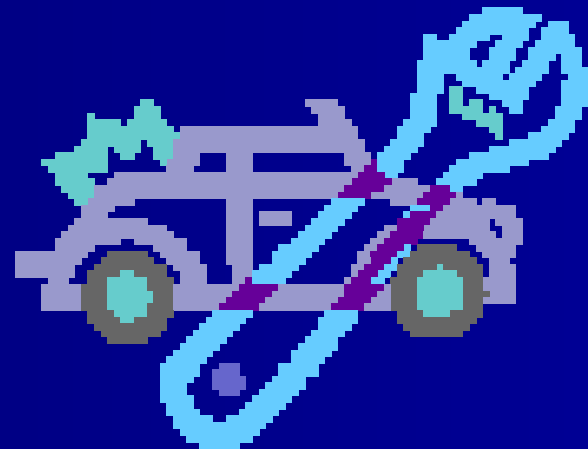
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ENGINE LIFE AND
WEAR

Increased lubricity

Maintenance program

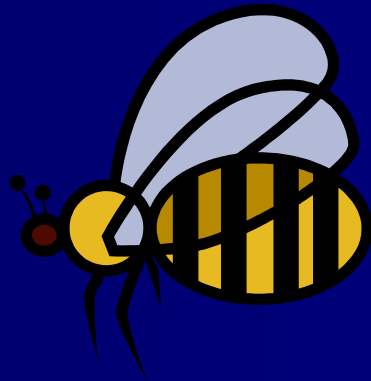
Engine problems



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PROBLEMS
ENCOUNTERED

SPLASH BLENDING



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DIRECT COSTS VS SAVINGS

Actual per gallon more

Life cycle issue

Human Health Impacts

Cost of other alternatives

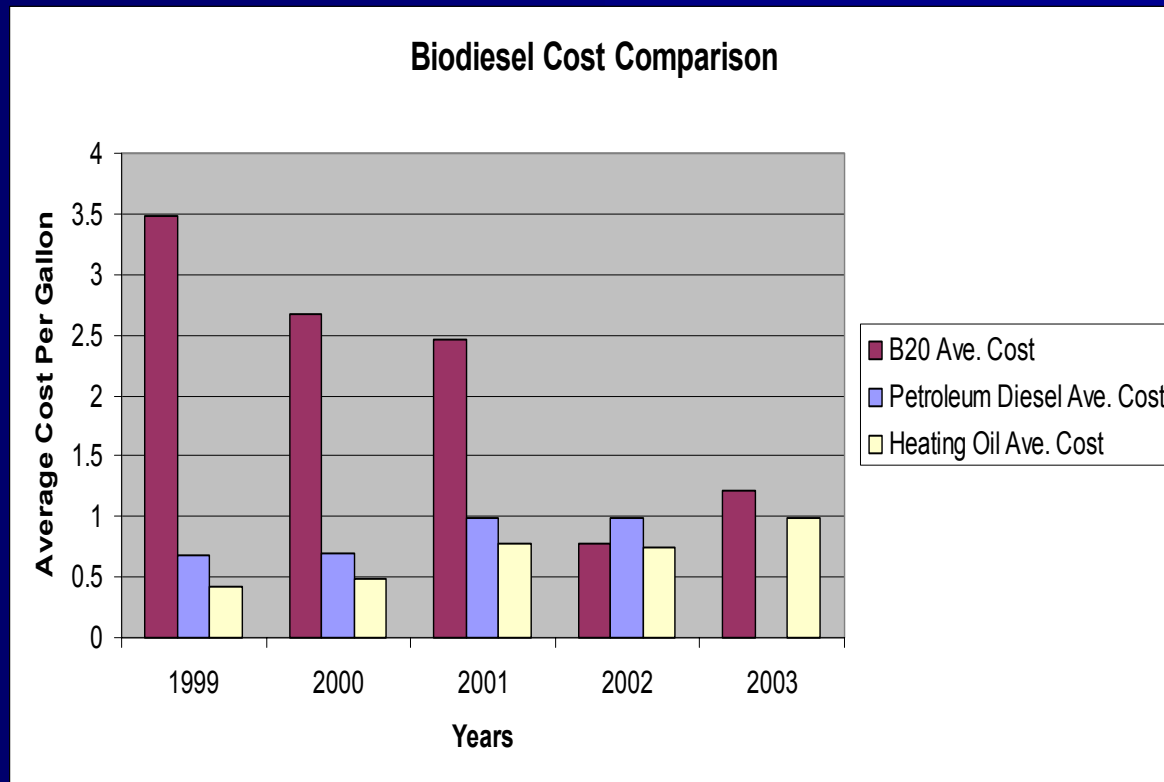
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COST ANALYSIS

“Immediate price is more, yes. But Figure in the reduced costs of Middle East politics, environmental damage, etc., and then it’s a bargain.”

Autoweek January 12, 2004
Diesel Smiles on US

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NON VEHICLE USAGE

Heating Oil – B-05 to B-20

Backup power with generators

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NON VEHICLE USAGE CON'T.

Duel fuel operation in heating plants

Emergency deliveries – back to diesel

Annual Air Emissions Report

Building 001

Emergency Generator



BUILDING 014 PLANT



Building 014 Fuel Storage and Containment



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RELATED PROGRAMS

Biobased materials

Hydraulic fluid

Motor oil

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SUMMARY

Benefits are far greater than
problems associated with biodiesel

Supporting American Agriculture

